

## Multimedia Presentation System 200

- > System switcher, audio processor, and control system
- > Out-of-the-box switching and audio control
- > 4 video/HDTV and 4 RGB/computer inputs
- > Built-in input signal sensing / auto-switching capable
- > Separate display and touchpanel preview outputs
- > NEW! RGB Pass-thru mode for easy integration with DigitalMedia
- > QuickMedia and Crestron Home CAT5 AV connectivity
- > 8 balanced stereo audio inputs / 2 gated mic inputs
- > Separate program, speech, and record outputs
- > Graphic and parametric equalization / 40mS audio delay
- > Built-in 40 watt amplifier — stereo, 70V, or 100V models
- > 2-Series control engine / e-Control 2 Web server
- > 10/100 Ethernet / RoomView and SNMP support
- > 2 RS-232, 4 IR, 4 digital in, & 4 relay control ports
- > Front panel setup and control / Backlit LCD display
- > Keypad, touchpanel, and wireless control options
- > Internal power supply / 2-space rack-mountable

The MPS-200 is a complete presentation control and signal routing solution for boardrooms and classrooms. Integrating the control system, multimedia switcher, audio processor, and amplifier into a single 2-space rackmount package, the MPS-200 eliminates the need for separate components without forfeiting performance or flexibility.

**System Switcher**—Right out of the box, the MPS-200 provides high-performance switching of 4 video and 4 RGB computer sources to a single projector or flat-panel display. Composite, S-Video, component and RGBHV signals can be routed to the appropriate inputs on the display device, with control of the display provided via Ethernet, RS-232 or IR. Input signal sensing is provided on every video and RGB input to enable auto-switching functionality and provide device power status information to the control system. Selectable sync impedance on the RGB inputs helps accommodate cable runs of varying lengths.

NEW! RGB Pass-thru mode provides a quick path to integration with the ground-breaking Crestron DigitalMedia™ system. With just a single 15-pin VGA cable connected to a DM-MD6X1 DigitalMedia switcher, DMC-DVI input card, or any other DM product with an RGB input, the MPS-200 automatically routes whatever video signal is selected – whether RGB, component, S-Video, or composite – allowing seamless conversion to digital for distribution to HDTV displays and projectors throughout your facility.

**Touchpanel Output**—A second discrete output is provided on the MPS-200 to feed a preview signal to the system touchpanel or other monitor. This output is controlled separately from the main display output, allowing a different source to be viewed on the touchpanel. The touchpanel connection is facilitated through a choice of QuickMedia® (QM) or Crestron Home® (CH) CAT5 Balanced Video outputs, simplifying wiring to a wide range of Crestron touchpanels. The QM output supports high-resolution RGB and HDTV plus audio, while the CH output is limited to standard video and HDTV only (dependent upon the capabilities of the touchpanel).



**QuickMedia®**—The QM Touchpanel output can also be used to feed signals straight to the primary display device, providing a very streamlined, low-cost, long-distance wiring solution. The Crestron exclusive QuickMedia transport transmits high-resolution RGB, HD video, stereo program and microphone audio signals up to 450 feet over a single inexpensive CAT5e type cable<sup>[1]</sup>. Just one CresCAT-QM cable and a QM receiver are all that is required for complete signal routing and device control, eliminating all the bulky, expensive cabling that would otherwise be needed.

**Professional Audio Features**—Eight stereo audio inputs accept balanced or unbalanced line-level signals from computers and other program audio sources. To accommodate a wide range of signals, adjustable input compensation is employed to help maintain consistent volume levels when switching between sources. In addition to the 8 program inputs, two gated microphone/line inputs are included with software-switchable 48V phantom power and independent 4-band speech-optimized equalization. Versatile matrix mixing allows the selected program signal and the microphone signals to be separated or mixed in any combination to feed local Program, Speech, and Record outputs, each with its own unique mix.

Three "local" balanced line level outputs are provided on the MPS-200, each with independent adjustments for volume, bass, treble, and mute. The stereo PROGRAM and mono SPEECH outputs are normally intended for driving external amplification, with relay muting on each output to prevent "thumping" on power up. The RECORD output allows for a separate stereo mix to feed a recording device or assistive listening system. Ten-band graphic equalization plus 2-band parametric equalization on each output eliminates the need for expensive outboard audio processors, and up to 40mS delay adjustment is available on the SPEECH output for proper loudspeaker alignment.

The QM Touchpanel output is controlled separately from the other audio outputs, allowing a different program source and microphone mix to be monitored on the touchpanel, or output to other audio equipment by way of an appropriate QM receiver or other QuickMedia device.

**Built-in Amplifier**—A 40-watt amplifier is built into the MPS-200, with three models available offering the choice of 8-ohm stereo, 70V mono, or 100V mono outputs. For large rooms requiring more power, the MPS-200 supports plug-and-play compatibility with Crestron QM-Series 3-channel amplifiers, providing a complete solution for driving a professional loudspeaker system with separate program and speech channels.

**Front Panel Control**—Out of the box, the MPS-200 front panel supports easy pushbutton routing of input sources to each of the outputs, and audio volume adjustment using the volume control knob. Dedicated buttons and indicators are also provided for separate control of system power and projector power. In addition, five preset buttons are included for custom functions such as lowering a projection screen, closing blinds, or selecting a lighting preset.

The front panel label strips are easily customized using Crestron Engraver software or standard 3/8" tape labels, allowing for the clear designation of each input, output, and preset button. When selected, these functions will also appear on the LCD display as generic names (Input 1, 2...), or as custom names (DVD, Podium PC, Screen Up, etc.).



Easy setup of the MPS-200 is facilitated through the LCD display without necessitating a computer. Together with 4 softkey buttons, 4 menu navigation buttons and the volume knob, the LCD enables configuration of IP network, audio, and other system settings. For security, the front panel controls can be password protected or locked out.

**2-Series Control System**—Integrated into the MPS-200 is a Crestron 2-Series Ethernet control system complete with e-Control®2 Web server and a host of RS-232, IR, digital input and relay control ports for integration with third-party equipment. A basic AV presentation room with projector, screen, keypad or small touchpanel, and wireless remote control can easily be set up in minutes using the MediaManager Wizard software. Or, a fully custom system can be programmed using SystemBuilder™ or SIMPL™Windows® software. Either way, the MPS-200 works with Crestron RoomView® Help Desk software, the industry's most comprehensive facility-wide asset management solution.

**Room Control Options**—Without requiring any programming, the MPS-200 can be controlled simply using a Crestron APAD LCD Controller or a selection of keypads. With custom programming, our complete line of Isys™ touchpanels and MediaManager FlipTops is supported. Equipped with an optional CNXRMIRD IR receiver, the MPS-200 allows any Crestron IR wireless touchpanel or handheld remote to be used for a low-cost wireless control solution. Or, adding an RF wireless gateway or Wi-Fi access point enables use of a wide range of 1-way and 2-way RF wireless handheld remotes and touchpanels.

## AVAILABLE MODELS

### MPS-200

Multimedia Presentation System w/Stereo Amplifier

### MPS-200-70V

Multimedia Presentation System w/70 Volt Amplifier

### MPS-200-100V

Multimedia Presentation System w/100 Volt Amplifier

## SPECIFICATIONS

### Processor

CPU: 32-bit Freescale ColdFire® Microprocessor

### Memory

SDRAM: 32 MB

NVRAM: 256 KB

Flash: 16 MB

### Operating System

Real-time, preemptive, multitasking kernel, multi-threaded; FAT32 file system with long names; supports SIMPL™ Windows® and SIMPL+®

### Ethernet

10/100BaseT, static IP or DHCP/DNS, SSL, auto-negotiating, full duplex TCP/IP, UDP/IP, CIP, SMTP, SNMP, built-in Web server and e-mail client; supports Crestron e-Control® XPanel and RoomView® applications

### Video

**Switcher:** 8x2 crosspoint matrix, 1x4 output format selector, RGB pass-thru mode (multi-format via RGB output connection)

**Signal Types:** RGB and composite, S-Video, or component video (does not transcode)

**Video/HDTV Formats:** NTSC or PAL, HDTV up to 1080i/1080p

**RGB Formats:** RGBHV, RGBS

**Maximum Resolution:** QXGA 2048 X 1536 @60Hz (WUXGA 1920 X 1200 @60Hz via QM)

**Blanking Time:** < 0.1 second

**Sync Rise/Fall Time:** 3.5 ns maximum

**Sync Latency:** < 30 ns

**Gain:** 0dB (75 ohms terminated)

### Audio

**Switcher/Preamp:** 8x2 stereo crosspoint matrix, 2-channel gated mic preamp w/EQ, 4x5 mic/program matrix mixer, stereo volume/tone control and EQ per each of PROGRAM and RECORD outputs, mono volume/tone control and EQ/delay on SPEECH output, integrated power amplifier

**A-D/D-A Conversion:** 24-bit, 48 kHz

**Output Volume Range:** -80dB to +20dB, 0.1dB steps

**Mixer Volume Range:** -80dB to 0dB, 0.1dB steps

**Mute:** -100dB (electronic), -120dB (relay)

**Input Compensation:** ±10dB, 0.1dB steps

**Mic Input Gain:** 0 to 100 % (40dB range) plus mute

**Gate Level (Threshold):** 0 to 100 %

**Attack:** 0 to 100 mS

**Decay (Release):** 0 to 5000 mS

**Mic EQ Filter Gain:** ±12dB, 0.1 dB steps

**Mic EQ Filter Center Frequencies:** 160, 500, 1.2k, 3k Hz

**Bass Gain Range:** ±12dB @ 100Hz, 0.5dB steps

**Treble Gain Range:** ±12dB @ 10kHz, 0.5dB steps

**Output Equalization:** 10-band graphic + 2-band parametric

**PEQ Filter Gain:** ±12dB, 0.1 dB steps

**PEQ Filter Bandwidth:** 0.1 to 3.0 octaves, 0.1 octave steps

**PEQ Filter Center Frequency:** 25Hz to 20kHz, 0.5Hz steps

**PEQ Filter Types:** Low Pass, High Pass, Peaking Eq, Notch, Treble Shelf, Bass Shelf

**GEO Filter Gain:** ±12dB, 0.1dB steps

**GEO Filter Center Frequencies:** 31.5, 63, 125, 250, 500, 1k, 2k, 4k, 8k, 16k Hz

**Speech Output Delay:** 0 to 40 mS, 1mS steps

**Frequency Response:** 20Hz to 20kHz ±0.5dB (PROG/REC OUT), 50Hz to 20kHz ±0.5dB (SPEECH OUT), 20Hz to 20kHz ±0.5dB (SPEAKER @ 8 ohms), 100Hz to 20kHz ±1.5dB (SPEAKER @ 70V or 100V)

**S/N Ratio:** 90dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz A-weighted), 90dB (SPEECH OUT @ 10dBV, 50Hz to 20kHz A-weighted), 90dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz A-weighted), 90dB (SPEAKER @ 70V or 100V, full output, 20Hz to 20kHz A-weighted)

**THD+N:** 0.05% (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), 0.05% (SPEECH OUT @ 10dBV, 50Hz to 20kHz), 0.7% (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz), 0.7% (SPEAKER @ 70V or 100V, full output, 100Hz to 20kHz A-weighted)

**Stereo Separation:** -75dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), -60dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz)

**Channel Crosstalk:** -70dB (AUD IN @ 10dBV, 20Hz to 20kHz)

### Connectors - Audio

**MC/LN 1 - 2:** (2) 5-pin 3.5mm detachable terminal blocks

Comprises (2) balanced microphone/line inputs

Balanced Mic Input Level: -52 to -12 dBV, 240 mV<sub>rms</sub> maximum

Balanced Line Input Level: -28 to +11 dBV, 3.7 V<sub>rms</sub> maximum

Unbalanced Line Input Level: -34 to +5 dBV, 1.85 V<sub>rms</sub> maximum

Mic Input Impedance: 3.9k ohms, accepts 60 to 600 ohm source

Line Input Impedance: 19k ohms balanced, 9.5k ohms unbalanced

Phantom Power: 10 mA (total) @ 48 Volts DC, software enabled to both mic inputs

**PROG OUT:** (1) 5-pin 3.5mm detachable terminal block

Balanced/unbalanced stereo line-level output

Output Impedance: 200 ohms balanced, 100 ohms unbalanced

Maximum Output Level: 4 V<sub>RMS</sub> balanced, 2 V<sub>RMS</sub> unbalanced

**REC OUT:** (1) 5-pin 3.5mm detachable terminal block

Balanced/unbalanced stereo line-level output (does not include relay mute)

Output Impedance: 200 ohms balanced, 100 ohms unbalanced

Maximum Output Level: 4 V<sub>RMS</sub> balanced, 2 V<sub>RMS</sub> unbalanced

**SPEECH OUT:** (1) 3-pin 3.5mm detachable terminal block

Balanced/unbalanced mono line-level output

Output Impedance: 200 ohms balanced, 100 ohms unbalanced

Maximum Output Level: 4 V<sub>RMS</sub> balanced, 2 V<sub>RMS</sub> unbalanced

**AUD IN 1 - 8:** (8) 5-pin 3.5mm detachable terminal blocks

Balanced/unbalanced stereo line-level inputs

Input Impedance: 24k ohms balanced/unbalanced

Balanced Input Level: -20 to +12 dBV; 4 V<sub>RMS</sub> maximum

Unbalanced Input Level: -20 to +6 dBV; 2 V<sub>RMS</sub> maximum

**SPEAKER:** (1 or 2) 2-pin 5mm detachable terminal blocks, speaker-level audio outputs

Wire Size: Connector accepts 12 AWG maximum

Output Power (MPS-200): 20W RMS per channel stereo into 8 ohms, 4 ohms tolerant

Output Power (MPS-200-70V): 40W RMS mono at 70 Volts

Output Power (MPS-200-100V): 40W RMS mono at 100 Volts

**Connectors - Video**

**COMP/Pb, Y/Y, C/Pr 1 - 4:** (4) sets of (3) BNC female video inputs

Each set configurable as:

(1) Component/HDTV (YP<sub>B</sub>P<sub>R</sub>) video input, or

(1) S-Video (Y/C) input, or

(1) Composite input

Input Level: 1 V<sub>P-P</sub> nominal

Input Impedance: 75 ohms nominal

DC Offset: Insensitive to DC offset (AC coupled)

Video signal sensing on COMP/P<sub>B</sub> or Y/Y

**RGBHV 5 - 8:** (4) DB15HD female, RGBHV (VGA) inputs

Format: RGBHV or RGBS

RGB Input Level: 1 V<sub>P-P</sub> nominal

RGB Input Impedance: 75 ohms nominal

Sync Input Level: 2 to 5 V<sub>P-P</sub>

Sync Input Impedance: 75, 500, or 1k ohms individually selectable for H and V via bottom panel DIP switch;

Video signal sensing on "H-SYNC"; Defeatable DDC pull-up resistors

**COMP OUTPUT 1:** (1) BNC female, composite video output

Output Level: 1.0 to 1.1 V<sub>P-P</sub> (terminated, with 1 V<sub>P-P</sub> input)

Output Impedance: 75 ohms nominal

**Y, C OUTPUT 1:** (2) BNC female, S-Video (Y/C) video output

Output Level: 1.0 to 1.1 V<sub>P-P</sub> (terminated, with 1 V<sub>P-P</sub> input)

Output Impedance: 75 ohms nominal

**Pb, Y, Pr OUTPUT 1:** (3) BNC female, component/HDTV (YP<sub>B</sub>P<sub>R</sub>) video output

Output Level: 1.0 to 1.1 V<sub>P-P</sub> (terminated, with 1 V<sub>P-P</sub> input)

Output Impedance: 75 ohms nominal

**RGBHV OUTPUT 1:** (1) DB15HD female

RGBHV, component, S-Video, and composite video output

Formats: RGBHV, RGBS, YPbPr, Y/C, composite

RGB/Video Output Level: 0.7 to 0.75 V<sub>P-P</sub> (terminated, with 0.7 V<sub>P-P</sub> input, unity gain)

RGB/Video Output Impedance: 75 ohms nominal

H/V Sync Output Level: 4 to 5 V<sub>P-P</sub>

H/V Sync Output Impedance: 55 ohms

H/V Sync Polarity: Follows input

**TOUCHPANEL CH 2:** (1) 8-wire RJ45 female, CAT5 balanced video output port

Signal Types: Dynamically configurable for component (YP<sub>B</sub>P<sub>R</sub>), S-Video (Y/C), or composite video;

Video/HDTV Formats: NTSC or PAL, HDTV up to 1080i

Output Impedance: 100 ohms balanced

Connects to CH CAT5 balanced video input port of a compatible touchpanel or other device via CresCAT cable

**TOUCHPANEL QM 2:** (1) 8-wire RJ45 female, QuickMedia output port

Signal Types: Dynamically configurable for RGBHV, component (YP<sub>B</sub>P<sub>R</sub>), S-Video (Y/C), or composite video with stereo program and 2-channels microphone audio;

RGB Format: RGBHV, RGBS

RGB Output Resolution, Non-interlaced: 1920 x 1200 maximum (60Hz limit at 1600 x 1200 or higher);

Video/HDTV Formats: NTSC or PAL, HDTV up to 1080i/1080p

Connects to QM input port of a compatible touchpanel or other QuickMedia device via CresCAT-QM or CresCAT-IM cable<sup>[1]</sup>

**Connectors - Control & Power**

**IR/SERIAL OUT A - D:** (4) 2-pin 3.5mm detachable terminal blocks

IR/Serial output ports

IR output up to 1.2 MHz

1-way serial TTL/RS-232 (0-5 Volts) up to 9600 baud

**IR IN:** (1) 3-pin 3.5mm detachable terminal block

For connection of the CNXRMIRD IR Receiver (sold separately)

Allows control from IR wireless remotes using RC-5 command set

**INPUT 1 - 4:** (1) 5-pin 3.5mm detachable terminal block

Comprises (4) digital/contact closure inputs

Rated for 0-24 Volts DC, referenced to GND

Input Impedance: 2.2k ohms pulled up to 5 Volts DC

Logic Threshold: 2.5 Volts DC nominal with 1 Volt hysteresis band

**RELAY 1 - 4:** (1) 8-pin 3.5mm detachable terminal block

Comprises (4) normally open, isolated relays

Rated 1 Amp, 30 Volts AC/DC

MOV arc suppression across contacts

**COM A - B:** (2) DB9 male, bidirectional RS-232 ports

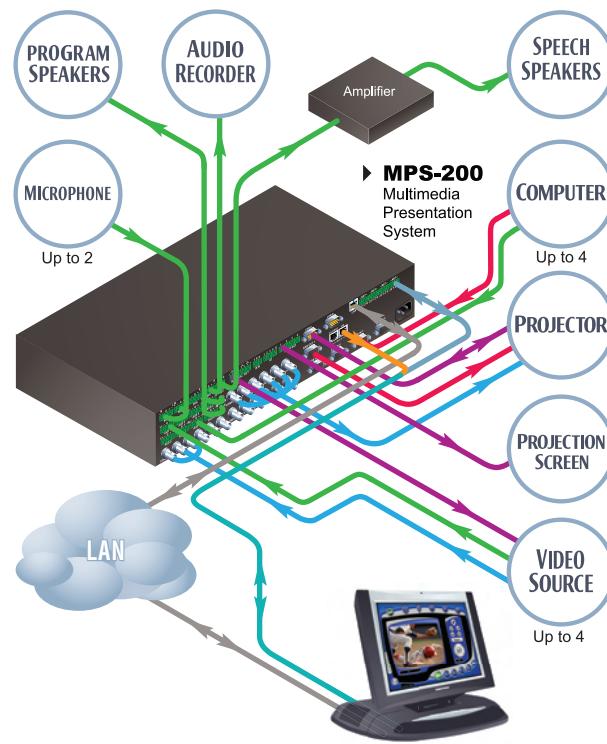
Up to 115.2k baud, hardware and software handshaking support

**LAN:** (1) 8-wire RJ45 with 2 LED indicators, 10/100BaseT Ethernet port

Green LED indicates link status, yellow LED indicates Ethernet activity

**NET:** (4) 4-pin 3.5mm detachable terminal blocks, Cresnet Master ports, paralleled

Available Cresnet Power: 30 Watts



**Color Key**

Control	Video	Audio
CAT5E	Cresnet	LAN
RGB		
		CresCAT-QM

**G:** (1) 6-32 screw, chassis ground lug

**100-240V~2.5A:** (1) IEC Socket, main power input  
Mates with removable power cord, included

**COMPUTER (front):** (1) USB Type B female  
USB 1.1 computer console port (cable included)

### LCD Display

Green LCD alphanumeric, adjustable backlight, 2 lines x 20 characters per line  
Displays input/outputs by name, volume level, setup menus, time/date, and other system information

### Controls and Indicators

**NET:** (1) yellow LED, indicates Cresnet bus activity

**MSG:** (1) yellow LED, indicates control system has generated an error message

**HW-R:** (1) recessed miniature pushbutton for hardware reset, reboots the control system

**SW-R:** (1) recessed miniature pushbutton for software reset, restarts the SIMPL program

**SYS PWR:** (1) pushbutton and green LED, controls system power

**PROJ PWR:** (1) pushbutton and green LED, controls display device power

**SOFTKEYS:** (4) pushbuttons for activation of LCD driven functions and passcode entry

**MENU:** (1) pushbutton, steps menu back one level

**A,V:** (2) pushbuttons, scroll up or down through menu and adjust menu parameters

**ENTER:** (1) pushbutton, executes highlighted menu or value

**VOLUME:** (1) continuous turn rotary encoder, adjusts menu parameters, defaults to program audio volume

**FUNCTION 1 – 5:** (5) pushbuttons and red LEDs, programmable for any control system function

**IN 1 – 8:** (8) pushbuttons and red LEDs, select input to be routed

**OUT 1 – 2:** (2) pushbuttons and red LEDs, select output destination

### Power Requirements

**Main Power:** 2.5 Amps @ 100-240 Volts AC, 50/60 Hz

**Available Cresnet Power:** 30 Watts

### Environmental

**Temperature:** 41° to 104°F (5° to 40°C)

**Humidity:** 10% to 90% RH (non-condensing)

### Enclosure

**Chassis:** Steel, black matte powder coat finish, convection-cooled, vented top and sides

**Faceplate:** Extruded aluminum, black matte powder coat finish with polycarbonate label overlay

**Mounting:** Freestanding or 2U 19-inch rack-mountable (adhesive feet and rack ears included)

### Dimensions

**Height:** 3.56 in (90 mm), 3.47 in (88 mm) without feet

**Width:** 17.03 in (433 mm), 19.0 in (483 mm) with ears

**Depth:** 12.54 in (319 mm)

### Weight

**MPS-200:** 9.5 lb (4.3 kg)

**MPS-200-70V/100V:** 11.3 lb (5.1 kg)

1. For QuickMedia wiring use CresCAT-QM, CresCAT-IM, or quality CAT5e/CAT6 cable with a delay skew of  $\leq 15\text{ns}$  per 100m; the maximum aggregate cable length and delay skew between any QM transmitter (origination point) and QM receiver (endpoint) is 450 ft (137 m) and 22 ns; a maximum of two QM midpoint devices may be inserted in a given QM signal path; exceptions apply, refer to each respective product manual for full detail.

### AVAILABLE ACCESSORIES

**APAD**  
Wall Mount LCD Controller

**C2N-DB12**  
12-Button Decorator Keypad

**CNX-B12**  
12-Button Designer Keypad

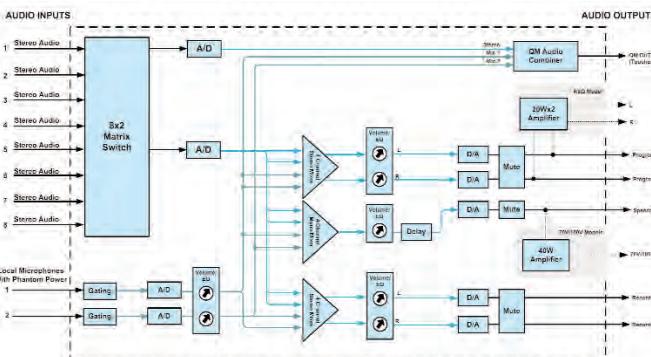
**C2N-FTB**  
FlipTop Control Center

**CNXRMIRD**  
IR Receiver

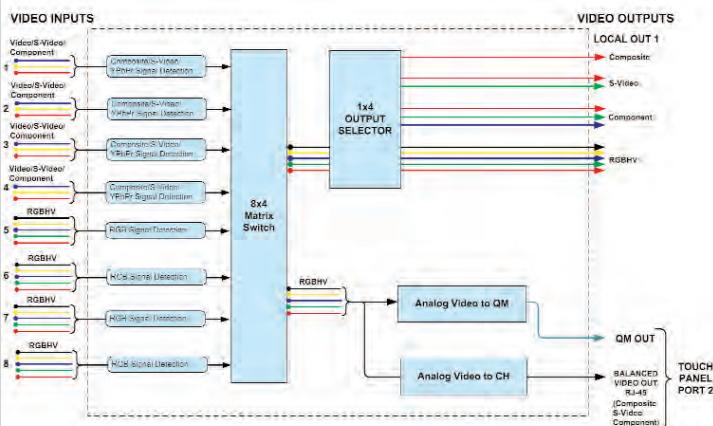
**QM-AMP3X80MM**  
3-Channel Multimedia Amplifier

**QM-AMP3X80SR**  
3-Channel Sound Reinforcement Amplifier

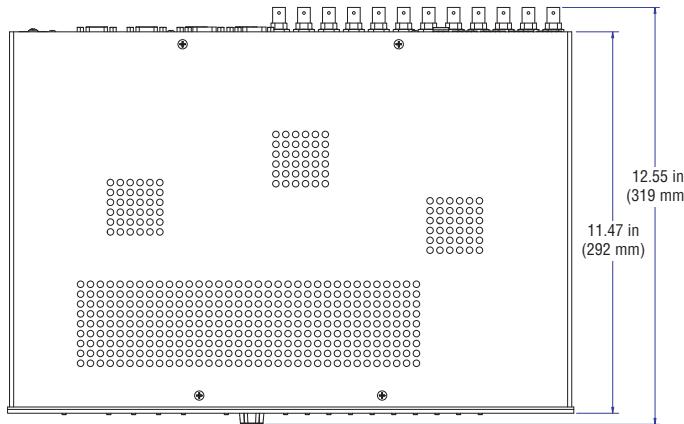
**CNSP-XX**  
Custom Serial Interface Cable



Internal Block Diagram – Audio



Internal Block Diagram – Video



Top View

### IRP2

IR Probe

### C2N-MNETGW

infiNET Gateway

### CLW-DIM1RF and CLW-SW1RF

infiNET Dimmer and Switch

### CLS-C6

iLux Integrated Lighting System

### RoomView® Express

Remote Help Desk and Resource Management Software

### RoomView® Server Edition

Enterprise Management and Scheduling Software